PATENT CLAIMS

1. A device (20) for revealing security elements that are present in an object (4) and that have at least one photoluminescent segment which is characterized by linearly polarized photoluminescence and/or linearly polarized absorption, characterized in that at least one light source (1) and at least one polarization filter (2) are arranged in such a way that the light (24) from the light source (1) is linearly polarized (23) by the polarization filter (2), strikes the object (4) and, respectively, the photoluminescent segments present therein, and photoluminescent light (25) from the segment can be observed through a further and/or the same polarization filter (2).

2. The device (20) as claimed in claim 1, characterized in that the at least one light source (1) emits light in the UV range, and in that the photoluminescent light (25) from the at least one segment lies in the visible range.

3. The device (20) as claimed in one of the preceding claims, characterized in that the light source is a UV light source (1) with an emission in the range from 180 to 500 nanometers, preferably in the range from 200 to 400 nanometers, it also being possible for it to be a broadband light source in front of which an appropriate bandpass filter is arranged, so that only UV light in particular in the aforementioned range strikes the object (4).

4. The device (20) as claimed in claim 3, characterized in that the bandpass filter is simultaneously also a polarization filter.

5. The device (20) as claimed in either of claims 3 and 4, characterized in that the light source is a mercury vapor lamp, a laser light source or a halogen lamp or an arc discharge lamp.

6. The device (20) as claimed in one of the preceding claims, characterized in that the observation takes place through a filter (5) which substantially does not permit light in the wavelength range of the light source (1) to pass, while light in the wavelength range of the visible photoluminescent light (25) from the segment can pass substantially unimpeded.

7. The device (20) as claimed in one of the preceding claims, characterized in that the light (24) shone in and the photoluminescent light (25) from the segment pass through the same polarization filter (2) and the polarization filter (2) for observation can be rotated about an axis perpendicular to the plane of the polarization filter (2), in particular with the aid of a motor (32).

8. The device (20) as claimed in claim 7, characterized in that the polarization filter (2) can be rotated with a rotation frequency in the range from 0.2 to 5 Hz, in particular preferably with a rotation frequency of 0.5 to 2 Hz.

9. The device (20) as claimed in either of claims 7 and 8, characterized in that the polarization filter (2) is enclosed in a mounting ring (30) and in that the polarization filter (2) is rotated by

a drive belt (31) which runs around the mounting ring (30) and is driven by a drive wheel (33) moved by a motor (32), in particular the mounting ring (30) preferably being rotatably mounted via at least 3 tangentially engaging guide rollers (34).

10. The device (20) as claimed in one of claims 1 to 6, characterized in that a first polarization filter is arranged between light source (1) and object (4), and in that a second polarization filter is arranged between object (4) and observation, and in that either the first or the second polarization filter can be rotated about an axis at right angles to the plane of the polarization filter, in particular with the aid of a motor, while the respective other polarization filter is not rotated.

11. The device (20) as claimed in one of claims 1 to 6, characterized in that at least 2 light sources (1) are provided, in that there is a polarization filter (2) in front of each of the light sources (1), the polarization directions of the light beams falling on the object (4) from the different light sources (1) being different and the different light sources (1) being activated in an alternating manner.

12. The device (20) as claimed in claim 11, characterized in that 2 light sources (1) are provided, and in that the polarization directions of the light beams falling on the object (4) from the 2 light sources (1) are displaced by 90 degrees, it being possible for the 2 light sources (1) to be switched on and off in an alternating way, preferably at a frequency in the range from

0.2 to 5 Hz, in particular preferably at a frequency of 0.5 to 2 Hz.

13. The device (20) as claimed in one of the preceding claims, characterized in that a camera, in particular preferably a CCD color camera (6), is provided for the observation, the image recorded by the camera being depicted on a display, in particular preferably a TFT-LCD color display (7), if appropriate following suitable image processing such as contrast adaptation, color adaptation, brightness adaptation, enlargement and/or resolution adaptation.

14. The device (20) as claimed in claim 13, characterized in that the camera is a multichip camera, in particular preferably a three-chip camera

15. The device (20) as claimed in one of the preceding claims, characterized in that the observation is carried out through a lens (36), in particular preferably through a magnifying glass.

16. The device (20) as claimed in one of the preceding claims, characterized in that the light source (1) is a UV lamp, preferably a UV tube having a wavelength in the range from 200 to 390 nanometers, in particular preferably having a wavelength in the range from 350 to 370 nanometers, and in that the polarization filter (2) is a broadband linear polarizer which, particularly preferably, has a polarizing action in a wavelength range from 300 to 770 nanometers.

17. The device (20) as claimed in one of the preceding claims, characterized in that means for checking further security features are additionally

provided, it being possible for the further security features to be magnetic, electric, optical, electronic, electro-optical features, for example selected from the group comprising bar codes, magnetic strips, conductivity, luminescence, photoluminescence, up-conversion (anti-Stokes), infrared signatures, electronically readable text (OCR text), including those with infrared text, X-ray fluorescence features.

18. A method for revealing security elements that are present in an object (4) and that have at least one photoluminescent segment which is characterized by linearly polarized photoluminescence and/or linearly polarized absorption, characterized in that light (24) from at least one light source (1) is linearly polarized (23) by at least one polarization filter (2), strikes the object (4) and, respectively, the photoluminescent segments present therein, and photoluminescent light (25) from the segment is observed through a further and/or the same polarization filter (2), use particularly preferably being made of a device as claimed in one of claims 1 to 17.